IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF	:	Kennedy et al.
FOR	:	**GOLF BALL WHICH INCLUDES FAST-CHEMICAL-REACTION-PRODUCED COMPONENT AND METHOD OF MAKING SAME**
SERIAL NO.	:	Unknown
FILED	:	Concurrently Herewith
EXAMINER	:	R. Gordon (of parent)
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(SIGNATURE OF SENDER)

Cleveland, Ohio 44114-2518
June 7, 2001

PRELIMINARY AMENDMENT

Assistant Commissioner of Patents
Washington, D.C. 20231

Dear Sir:

This Preliminary Amendment is submitted with the filing of the above-captioned application to address a rejection in a parent application Serial No. 09/411,690 filed on October 1, 1999.[1] That rejection was made final in an Office Action mailed on April 10, 2001 in the parent '690 application. This Preliminary Amendment is submitted for consideration of claims 1-48 in the accompanying application.

[1] That parent application contains various allowed claims. Claims 1-48 of the present application were cancelled from that parent in order to pursue prosecution of the other now-allowed claims. That is, claims 1-48 of the present application correspond to claims 1-48 of the parent application.

Independent claim 1 recites a process for making a golf ball which comprises a step of forming one or both of a cover and a core component for the golf ball by a particular operation involving mixing two or more reactants together to produce a reaction product having particular characteristics. These particular characteristics are that the reaction product has a flex modulus of from about 1 to about 310 Kpsi, and a reaction time of less than two minutes. Additionally, the process of claim 1 calls for forming one or both of the cover and core components such that the cover and/or core has a thickness of at least about 0.01 inches.

Dependent claims 2-14 recite particular aspects of the process of claim 1. Dependent claim 15 recites the golf ball produced by the process of claim 1.

Independent claim 16 recites a multi-piece golf ball comprising a reaction injection molded material comprising polyurethane/polyurea. As noted in the specification, the term "polyurethane/polyurea" refers to polyurethane and/or polyurea.

Dependent claims 17-39 recite particular aspects of the golf ball called for in claim 16.

Independent claim 40 recites a process for producing a golf ball including a step of reaction injection molding a polyurethane/polyurea material to form a core layer and/or a cover layer for the ball.

Dependent claim 41 recites the process of claim 40 further comprising a step of recycling at least 20% of the polyurethane/polyurea that is produced in the process called for in claim 40. Claim 42 is dependent from claim 41 and recites the golf ball produced by the process of claim 41.

Independent claim 43 recites a process for producing a golf ball comprising forming a core, covering the core with covering material, coating and adding indicia to the covered ball wherein at least one of the

forming and covering steps comprises reaction injection molding a polyurethane/polyurea material.

Claim 44 is dependent from claim 43 and recites an additional step of recycling. Dependent claim 45 calls for the golf ball produced by the process of claim 44.

Independent claim 46 recites a golf ball comprising at least one fast chemical reaction produced layer having particular characteristics. Those characteristics as recited in claim 46 are that the layer has a flex modulus of 5 to 310 Kpsi in a reaction time of two minutes or less, and has a thickness of at least 0.01 inches.

Claim 47 is dependent from claim 46 and recites the golf ball having an inner cover layer.

Independent claim 48 recites a golf ball with a core and a cover in which the cover comprises polyurethane/polyurea which is formed from reactants in which 5 to 100 weight percent of the reactants are obtained from recycled polyurethane/polyurea.

Specifically, claims 1-48 (the same claims as are now being presented in this new application) in the parent '690 application were rejected under 35 U.S.C. § 103(a) as unpatentable over 5,813,923 to Cavallaro et al. in view of 4,762,322 to Molitor et al. The Examiner argued that:

> The golf ball is disclosed by the primary reference and the process, although common in the art, is taught by the secondary reference. Regarding claims 16-20, 23, 30-39 and 46-48, Cavallaro discloses a golf ball comprising a solid core and a dimpled single or multi-layer cover (col 12, lin 62), each can be made of polyurethanes and additional reactant/fillers (col 11-13). A recycled filler can also be included in the material (col 7, line 50), the glycolysis is common in the art. Similar to claims 24-29 the flex modulus of the cover is at least 75,000 psi (fig 1), the Shore D hardness is 70 (col 12, line 56) and the cover is at least 0.01 inch (col 13, line 55). The Molitor reference renders it obvious to mold the polyurethane layers of the primary reference golf ball by a reaction injection molding process (RIM), since such is an obvious expedient for providing the desired resiliency in a golf ball, as illustrated by Meliorate (col 5, lines 15-20).
>
> Regarding claims 21-22, the addition of a top coat layer

on the outer cover is a common feature in golf balls, it improves the longevity.

Applicant responded to that rejection by explaining:

The Examiner's rejection is based upon the assumption that merely because a reaction injection molding (RIM) process is used in the manufacture of a golf club head (as illustrated by the '322 patent to Molitor et al.), that such a process would be obvious in the manufacture of a golf ball. This assumption, perhaps appearing logical with hindsight and at first blush, is erroneous for several reasons.

First, such an assumption is based upon the belief that the physical requirements or demands of a club head (i.e. Molitor) and a golf ball (Cavallaro) are the same. Just as with the case of a tennis ball and racquet, a baseball bat and a ball, a hockey stick and a puck, etc., the products are vastly different, each having particular physical characteristics.

Second, the Examiner's rejection is misplaced because it is based upon a view that a golf ball designer or formulator would be motivated to consider the art in the field of golf clubs and shafts. That field of art is entirely different than the field of golf balls. Merely because the two products are used in the same sport has no bearing on their relatedness. For example, a designer of tennis balls would not look to the prior art of tennis racquets in developing a new ball. The same could be said for baseballs and baseball or softball bats, hockey pucks and sticks, etc.

Furthermore, the processing concerns in manufacturing a golf club head are significantly different than in forming golf balls according to the present invention. In the '322 patent, Molitor describes inserting weights in the molding process so that the weights are bonded to the molding material used in forming the club head. See col. 3, lines 4-9. In contrast, in producing a golf ball according to the present invention, it is desirable to produce a ball with a "seamless" cover layer. This is described in the application as a cover layer having generally the same microscopic and molecular structure distribution along the cover. See page 2 of the application. These concerns are significantly different from one another.

Moreover, the present rejection entirely ignores the many aspects and features of the present invention that are recited in the dependent claims. The Office Action does not address how the '322 patent to Molitor et al. and the '923 patent to Cavallaro et al. teach a process for making a golf ball involving forming a cover and/or core by mixing reactants together to produce a reaction product having a particular flex modulus and a reaction time of 30 seconds or less and a certain thickness (claim 5); or a demold time of 1 minute or less (claim 7). It is simply improper to rely upon an assumption that any reaction injection molding system would exhibit the particular

characteristics recited in the pending claims.

At most, Cavallaro et al. suggests, in a broad, shot-gun disclosure, that a thermoplastic polyurethane can be utilized amongst a large number of thermoplastic elastomers to form the mantle, or inner cover of a multi-layer golf ball. Additionally, the invention contemplates the use of a variety of conventional and non-conventional cover materials including thermoplastic and thermosetting (i.e. castable) polyurethane. However, little, if anything is disclosed concerning the use of reaction injection molded (RIM) polyurethanes for golf ball cover construction and the improved properties produced thereby. Furthermore, Molitor, directed to a process for producing golf club heads, fails to provide any additional teachings of the advantages of using a specific RIM polyurethane and/or process for producing golf ball components.

Accordingly, the Examiner's obviousness rejection is believed to be misplaced. Applicants respectfully request that this rejection be withdrawn and that the claims be allowed for issuance.

In the final Office Action of April 10, 2001 in the parent '690 case, the Examiner addressed Applicant's previous response by further asserting:

Regarding the statement that Molitor does not disclose the reaction injection molding process for golf balls, the rejection is over the combination Cavallaro et al. in view of Molitor et al. Cavallaro et al. teaches a golf ball construction having polyurethane outer covers, however, it lacks the teaching for forming the cover by a reaction injection molding process. It would have been obvious to one of ordinary skill in the art to form the outer polyurethane cover of Cavallaro et al. by reaction injection molding method in order to take advantage of the known benefits of the method. Note column 3, lines 12-23 of Molitor et al. which detail these advantages (i.e. low density, high strength to weight ratio).

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

The applicant's arguments that one of ordinary skill would not be led from the golf ball art to utilize a method which is known in golf club heads is not persuasive. The examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596

> (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, both references are directed to sports articles which utilize polyurethane outer covers. Also, the sports articles are subjected to severe impacting wherein a high strength to weight ratio would be a desirable quality for the articles. Attention is also directed to column 14, lines 36-47 of Cavallaro et al. which state that the outer layer may be injection or compression molded. Thus, it would have been obvious to one of ordinary skill in the art to utilize reaction injection molding instead of injection molding to form the outer polyurethane layer of Cavallaro et al. for the reasons advanced by Molitor et al. Attention is directed to column 5, lines 18-21 of Molitor et al. which specifically states that reaction injection molding is a well known technique. The applicant is requested to note that the specific characteristics of the method and the product obtained therefrom have been considered to be obvious given the statement by Molitor et al. that RIM is a well known method and lacking a showing of the characteristics criticality by a new and unexpected result.

Page 4-5 of April 10, 2001 Action.

The remarks set forth below are submitted to address that last round of arguments by the Examiner in the '690 parent case. The Examiner continued to rely upon the '322 patent to Molitor et al. and the mention of using a RIM process for forming a golf club head in that patent.

That rejection is simply wrong and unsupported. In addition to the picking and choosing of certain passages and ignoring other teachings in the two patents to Molitor et al. and Cavallaro et al., i.e. "piecemeal reconstruction," the Examiner ignored the combinational features of the pending claims. For instance, where is the teaching in the cited references for a process of making a golf ball by forming a cover and/or core component of a golf ball by mixing two or more reactants together to produce a reaction product having a flex modulus of 1 to 310 Kpsi and a reaction time of less than 2 minutes; in conjunction with the thickness of the resulting cover and/or core component being 0.01 inches? Alternatively, where is the teaching in any of the cited references to produce a reaction product having a reaction time of 30 seconds or less (claim 5)? Or, for instance, where is the teaching in any of the cited references to provide a multi-piece golf ball comprising a reaction injection molded material comprising polyurethane/polyurea material that includes

meta-tetramethyl diisocyanate (claim 39)? There is no such teaching in the references relied upon. Accordingly, a rejection under § 103 is improper.

To summarize, Cavallaro et al. merely suggests that a thermoplastic polyurethane could be utilized (among a litany of other thermoplastic elastomers) to form a mantle or inner cover layer of a multi-layer golf ball. Molitor et al., although mentioning the use of RIM for forming a component of a club used in the same sport, fails to provide any additional teachings of the numerous other aspects called out in the pending claims. It is wrong and against established law to reject the pending claims based on the severely limited disclosures of the patents to Molitor et al. and Cavallaro et al.

For at least these reasons, claims 1-48 are submitted to recite patentable subject matter. Early allowance is respectfully urged.

Respectfully submitted,

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